

PLANETS IN FEBRUARY.

est of the throng that grace the morning sky. She rises now three hours before the sun, shining with the serene radiance that distinguishes

her, and continues to be visible long after the stars have melted away in the star depths, almost to the very center of the sky.

On the 18th, at 2 o'clock in the morning, Venus reaches her greatest western elongation. Here she comes closest to Earth. She is 45° west of the sun, and can go on being seen for an innumerable days that rule her movements compel her to retrace her steps. The inner and innermost planets move in this way, oscillating in straight lines across the sky.

It is not so easy to keep the run of their paths, especially in the case of Venus. No planet of the system presents many paths so interlaid or so closely allied the planet on which we live.

She is our nearest neighbor except the moon, is nearly like the earth in dimensions, in the length of her day, in the possession of an atmosphere, and in the probability of

our condition of her surface." Besides she gratifies our æsthetic perceptions by being the best body to star the celestial firmament, and the only planet that is visible in the presence of the moonday sun. She is therefore a most interesting planetary study. Those who were witnesses of the recent transit of Venus across the sun, from which to commence observations. They saw for the first time the inferior conjunction which Venus passed between the earth and the sun, the transit when Venus was between the earth, she changed from an evening to a morning star, decentering the sun's eastern side, and appearing upon his western side. Since that time she has been moving steadily towards the sun, every morning, passing her period of greatest brilliancy, and turning now of her illuminated surface towards us.

On the 11th, a change occurs. She is stationary for a few days, and then commences to make her way back towards the sun, for she has passed the point of her declivity.

retracing her steps toward the sun until she reaches superior conjunction in September and completes her course as morning star, and com-

She is a charming object in the telescope during the month, shining as a crescent until elongation, then taking on the lovely aspect of a half-moon, and closing the exhibition "with the gibbous phase."

Venus rises, on the 1st, a few minutes after 4

Mars is morning star, ranking second in the order of position. He holds the honor of playing the role of the "messenger" between the month. He is in conjunction with Mercury on the 14th, at 6 o'clock in the morning, being then the first planet to appear in the eastern sky to be visible, but it is easy to overlook him. The picture the two planets would present, the one white in hue and the other red, if mortal eyes could see them, would be very striking indeed. The right ascension of Mars is 230.4m., his declination is 21° 21' south, and his place in the sky is 10.50.

Mars rises on the last about half-past 6 o'clock in the morning; on the 25th, he rises a few minutes earlier.

Taurus is morning star, and is fast approaching the point where he is in the most favorable position for observation.

and observers who have small telescopes can easily find him towards the east of the month in the east, about seven degrees south of Denebala, a star of the second magnitude in Leo. Sweep-

Uranus rises on the 1st about half past 3 o'clock in the evening. On the 25th, he rises about a quarter before 6 o'clock. Mercury is evening star until the 5th, and morning star the rest of the month. On the 5th, at 6 o'clock in the evening, he is in inferior conjunction, passing between the earth and sun. If he is not seen on the 5th, he is about to make a transit as Venus, December, 6th of Jan.

member. As he does not reach his descending node until twenty-three days after inferior conjunction, the message will be invisible. Observers must wait until the planet is visible in the morning after the conjunction of Mercury. At inferior conjunction, Mercury passes to the sun's western side and becomes invisible. The planet is visible in the morning under conditions with those fully described in the preceding pages. The planet is visible in the morning when it is in western elongation during the last week in the month to be visible in the naked eye, rising at 11:30 a.m. before dawn. The planet is visible in the morning at the start of the sunrise point. Right ascension is 21h. 31m., his declination is 11° 25' south, his distance from the sun is 0.47 a.u. and his distance from earth is 0.71 a.u. Mercury sets on the 24th, about 6 o'clock in the evening; on the 1st, he rises at half-past 5 o'clock in the morning.

Mercury is visible, and through a comparison between him and the faintest of the stars in the constellation of Virgo, it is possible to tell to his disadvantage, he makes up for the deficiency in several ways. It is no trouble to fol-

prevail, he is a conspicuous object in the east, recognized by an upward glance at the sky, while the observer who would see Venus must anticipate the darkness of the night. Venus, self-luminous, is surrounded by the brilliant rays of the stars, while Venus reigns alone; his position, as leader of the clustering brilliants that swarm around his path, gives a special interest to his present aspect. Nearly twelve years will pass before he will again occupy such a position in the sky. Observers should therefore note his present favorable position, and enjoy the superb picture he presents as he leads the starry hosts in grand procession from east to west over the

The right ascension of Jupiter is 6h. 23m., his declination is 22° 37' north, his diameter is 42". 4, and he is in Taurus.

Jupiter comes on the 1st at 4 o'clock in the morning; on the 20th, he sets about a quarter after 2 o'clock.

Saturn is evening star, preceding Jupiter nearly three hours in rising and setting, for the distance between the two planets is continually increasing. He is still an interesting object among the stars, though perceptibly decreasing in size and lustre as he wends his way towards the sun, and travels farther away from the

He reaches quadrature with the sun, having advanced just half way on his course from opposition to conjunction. He is then 90° from the sun, rises at noon and sets about midnight. His *right ascension* is 31. 10m., his *declination* is 11° 32', and his *distance* from the sun is 17, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 8

The February 7th full moon, the *Wolf*, at 23 minutes after 7 o'clock in the evening. She takes on only three phases during the shortest month of the year: gibbous, full and waning. She is seen at all altitudes and as full moon. She is in conjunction, before her change, with Venus, on the morning of the 4th, being only about 1° above the horizon. She is also close to Mars and the 7th near Mercury. Passing at its conjunction to the sun's eastern side, she is in conjunction with the planet Saturn on the 10th, and with the nearest point to Jupiter, on the 16th, and on the 23d, two days after the full, she is near the point of the ecliptic where it crosses the

a planet, she is in the same right ascension, or longitude, though her declination, or latitude, may be several degrees north or south. Those who watch her progress eastward, averaging typically, will find that the planets give the order of their position in regard to the sun. Thus, she passes Venus, Mars and Mercury, the morning stars, then pays her respects to Neptune, Saturn and Jupiter, the evening stars, and finally to Uranus, the common planet, a morning star.

Students of the stars who follow the movements of the planets in February will find it interesting work to trace their winding paths. Venus reaches her greatest brilliancy, and approaches the star α of π Sagittarii, Mercury is in inferior conjunction with the sun, Mars is near

Mercury, and Neptune and Saturn are in quadrature. Astronomy must be studied practically, in order to awaken the dormant intellect. Books, lectures and illustrations can not do justice to this noble science. None but eye-witnesses can appreciate, even in a small degree, the magnitude and boundless range of the grand creations that people the vast spaces of the sky. That every star is but a very star-lit night picture of celestial beauty to alight beholders to "consider the heavens."—*Providence Journal*.

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Mrs. LANGTRY has said: "The newspaper men of America are the handsomest, brightest, and most courteous gentlemen I ever met," and she hasn't met Wirt Walton either.

This image shows a blank, aged, cream-colored page, likely an endpaper or flyleaf of a book. The paper has a slightly textured appearance with some minor creases and discoloration, characteristic of old paper. The left edge of the page shows the binding of the book, and the overall tone is a warm, off-white or light beige.